

ABSTRACT OF THE DISCLOSURE

A mixed fluid hydration system combines a multi-viscosity multi-ported valve body with field changeable valve cores providing single fluid valving with or without variable mixing to dilute carbohydrate and electrolytes fluids to match the varying physiological demands of prolonged exertion on the fly. A self-piercing self-sealing valve port allows piggybacking disposable delivery systems for straight on-off delivery or variable dilution. A single-use mixed-fluid bladder with self-piercing oral valves protects against dehydration and hypothermia at sea. A supported, film or thin film bladder that can only be inflated by compressed gas circumvents dual detonation and elevated pressure testing. A complementary lightweight film orally bladder provides redundancy of inflation means and chamber integrity. Over pressure protection on the oral bladder protects against accidental dual inflation while allowing for concurrent use of thin film technology. Cylinder seal spacer slows rate of compressed gas release into thin film while embedding inflator in the foam preserves the slim profile of Type III PFDs.